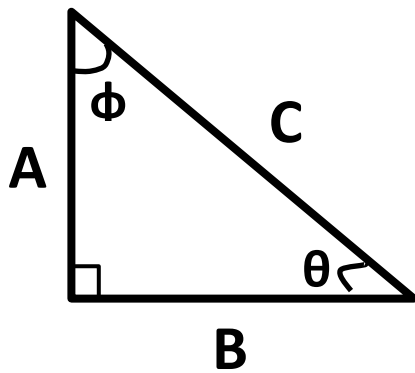
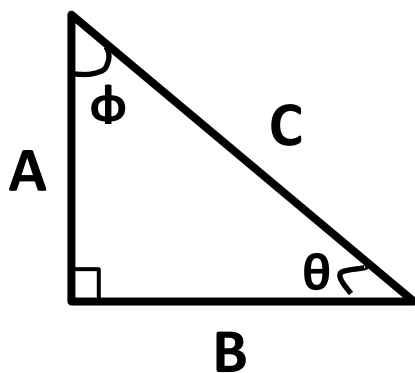


Review Questions



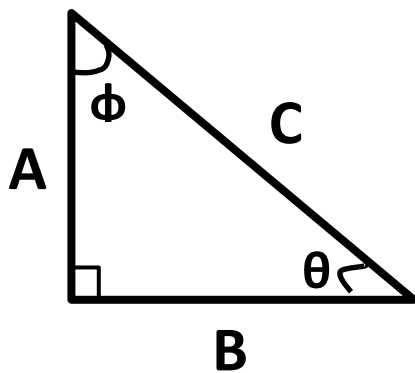
$$\begin{aligned} A &= 5 & \theta &= ? \\ B &= 3 & \phi &= ? \\ C &= ? \end{aligned}$$

Find θ



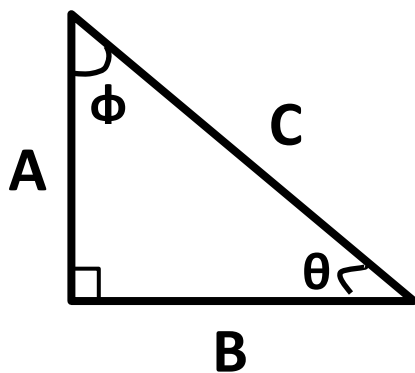
$$\begin{aligned} A &= 8 & \theta &= ? \\ B &= ? & \phi &= ? \\ C &= 3 \end{aligned}$$

Find ϕ



$$\begin{aligned} A &= 7 & \theta &= ? \\ B &= ? & \phi &= 40^\circ \\ C &= ? \end{aligned}$$

Find B

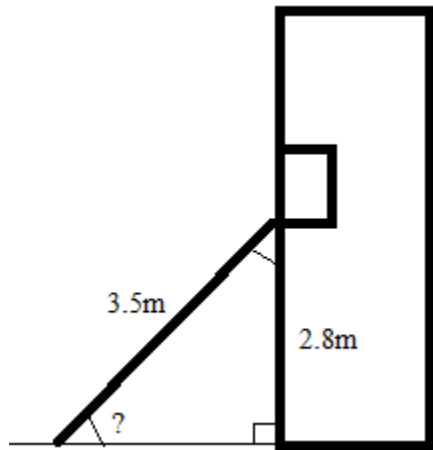


$$\begin{aligned} A &= ? & \theta &= 25^\circ \\ B &= 2 & \phi &= ? \\ C &= ? \end{aligned}$$

Find C

“Demonstration” Question

A building is on fire and a firefighter is leaning his ladder up against the building to rescue people who are stranded at a window 2.8 m above the group. If the ladder is 3.5 m long, at what angle will the ladder be to the building?



$$A = ?$$

$$B = 2.8\text{m}$$

$$C = 3.5\text{m}$$

$$\sin(\theta) = B/C$$

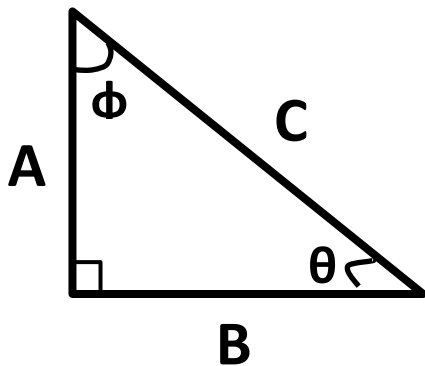
$$\sin(\theta) = (2.8\text{m})/(3.5\text{m})$$

$$\sin(\theta) = 0.8$$

$$\theta = \sin^{-1}(0.8)$$

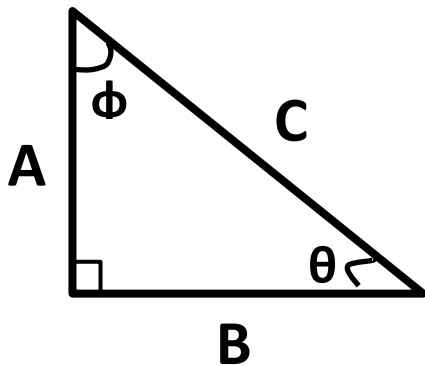
$$\theta = 53.1^\circ$$

Sample Activity Questions



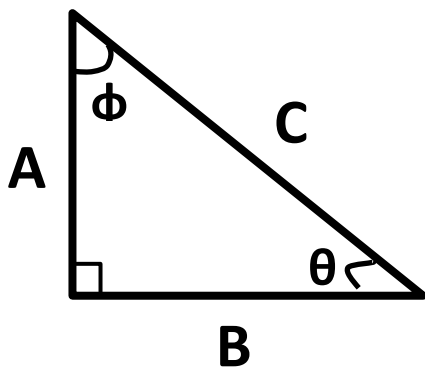
$$\begin{aligned} A &= 375 & \theta &= ? \\ B &= 399 & \phi &= ? \\ C &= ? \end{aligned}$$

Find θ



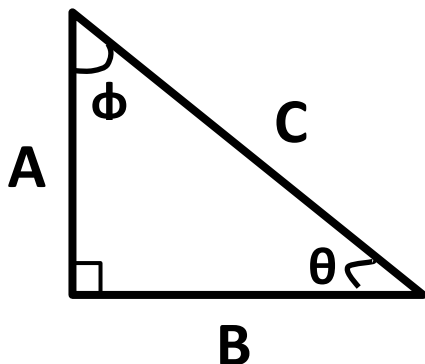
$$\begin{aligned} A &= 4.96 & \theta &= ? \\ B &= ? & \phi &= ? \\ C &= 8.35 \end{aligned}$$

Find ϕ



$$\begin{aligned} A &= 111 & \theta &= ? \\ B &= ? & \phi &= 89^\circ \\ C &= ? \end{aligned}$$

Find C



$$\begin{aligned} A &= ? & \theta &= 5.71^\circ \\ B &= 834.92 & \phi &= ? \\ C &= ? \end{aligned}$$

Find θ

(Word Problem) A sea captain is heading northwards towards an island 500 km away, and she receives a distress call from a ship which is 275 km east of the island. By how many degrees must the captain change her course by in order to help the other ship?

(Word Problem) Municipal building codes required stairs to be no steeper than 35° of inclination to the ground. If a new government building wants to build stairs that raise 1.76 m at their tallest, how long must the staircase be?

(Word Problem) A city decides to build a new suspension bridge. They build the central support to be 129 m tall and 487 m from either end of the bridge. If the support wire runs straight from the central support to the shore on both sides, how much wire will the building company need to purchase? (remember, there is wire on *both* sides of the bridge)

(Word Problem) Coal mines are required to have air shafts in case of a cave-in. Suppose a mine shaft elevator goes down as far as 190 m, and an air shaft extends from the elevator's lowest level to the surface at an angle of 18.5° . On the surface level of the mine, how far will the air shaft opening be from the elevator?